5. SITING STUDY RECOMMENDATIONS AND CONCLUSIONS

Figure 5-1, as well as previous figures, shows the proposed location of new INTEC service waste disposal ponds. Several factors contributed to the choice of location. However, the site-specific hydrogeology and soil engineering properties are not yet characterized. Additional data collection and analysis required to confirm the suitability of the location are tentatively scheduled to be completed by the end of 1999.

5.1 Designation of Cleared Areas A and B

Evaluation of previously discussed regulatory and critical concerns for siting of the new ponds resulted in the delineation of two areas near INTEC potentially free of restrictions. Area A, east of INTEC, is bounded primarily by CFA and INTEC wellhead protection zones, by the WAG 3 OU 3-13 modeled estimates of perched water spread from a 1.5 MG/day discharge volume, and by basalt outcrops and insufficient alluvium thicknesses along the eastern border of the area. Area B is also bounded by the CFA and INTEC wellhead protection zones. Additional borders are marked by the road running west of CFA and the USGS 100-year floodplain boundary. The wellhead protection zone for the Rifle Range well encompasses most of Area B, including the surveyed location of the new ponds. However, because of the small population served by the well, Area B was determined to be the acceptable and preferred location.

5.2 Factors Controlling Selection of the Proposed Location

The evaluation of all regulatory and technical issues presented in Sections 3 and 4 identified three principal drivers controlling the selection of Area B as the location for new percolation ponds.

1. WAG 3 OU 3-13-modeled estimates of the lateral extent of perched water beneath the existing percolation ponds (based on a 1.5 MG/day discharge volume) and the predicted lateral extent of perched water from new ponds (based on a 3.0 MG/day discharge volume) (Figures 3-10 and 3-11). (The OU 3-13 model is unsuitable for determining accurate monitoring well locations for the new percolation ponds because of its excessively conservative overestimation of lateral spread of perched water.)

2. Insufficient alluvium thicknesses in Area A (Figure 3-2 and 3-7).

3. Intersection of the WAG 3 OU 3-13-modeled lateral extent of perched water from new ponds with the wellhead protection zones for CFA and INTEC drinking water wells (Figure 4-4).

5.3 Remaining Data Gaps and Unresolved Issues Pertinent to Siting

The northwest corner of Area B, Figure 5-1, has been selected as the proposed location for new INTEC service waste disposal ponds. However, because there are no site-specific characterization data, the location cannot be confirmed as suitable until additional data are collected. Several other unresolved questions remain concerning effluent quality, background groundwater quality, status of the Rifle Range Well, and location within a wellhead protection zone. The following data gaps and remaining issues will be addressed in upcoming activities:

- Site-specific hydrogeological data such as:
  - Location, thickness, composition and attitude of interbeds and/or less permeable zones likely to impede vertical migration of wastewater

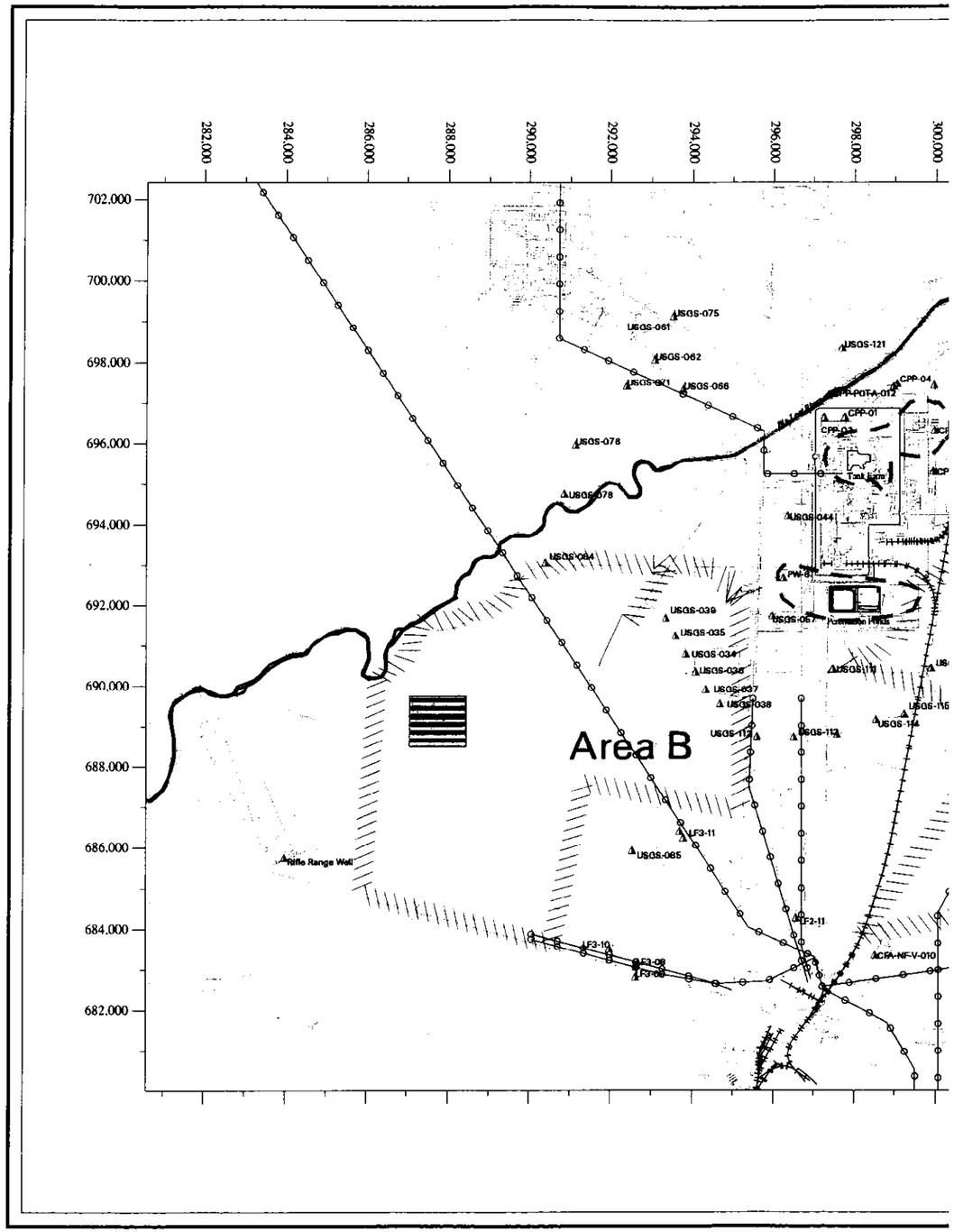

Figure 5-1. Cleared Areas A and B and proposed location of new percolation ponds with associated OU 3-13 estimates of lateral extent of perched water beneath existing ponds

- Depth to the aquifer
- Hydraulic influence of the BLR
- Groundwater flow direction and velocity.

- Impacts to and from the Big Lost River
  - Existence of perched water beneath the site from the BLR
  - Dilution effects in the aquifer between BLR and new percolation ponds
  - Recharge effects to existing and/or newly generated perched water bodies.
- Background and baseline groundwater quality data
  - Regional background groundwater quality and nearby sources of contamination
  - Site-specific background groundwater quality and a baseline data set from which to gauge impacts to the aquifer from wastewater disposal.
- Requirements for locating the facility within a wellhead protection zone:
  - Addition mixing zone analyses may be required by the State of Idaho
  - Rifle Range Well redesignation as a nonpotable water supply
  - Provision of drinking water for users of the Rifle Range facility.
- Physical condition of the Rifle Range Well
  - Annular seal in the well only extends to 46 m (150 ft) bls
  - Perching interbeds may be present below 46 m (150 ft) and cause direct downhole cascading of perching wastewater directly to the aquifer.
- Unidentified radionuclide in effluent, measured as gross beta, and in exceedance of regulatory limits
  - Gross beta levels measured in effluent exceed regulatory levels
  - Radionuclide(s) in the effluent causing the gross beta exceedances is yet unidentified.

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